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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,786	11/03/2005	Hindrik Willem De Vries	2602-0009	1486
43624	7590	09/04/2008		
DAVIDSON BERQUIST JACKSON & GOWDEY LLP			EXAMINER	
4300 WILSON BLVD., 7TH FLOOR			BURKHART, ELIZABETH A	
ARLINGTON, VA 22203				
ART UNIT		PAPER NUMBER		
1792				
MAIL DATE		DELIVERY MODE		
09/04/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/529,786

**Applicant(s)**

DE VRIES ET AL.

**Examiner**

ELIZABETH A. BURKHART

**Art Unit**

1792

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3-22, 24-28 and 30-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 3-6, 9-22, 24-27, 49 and 50 is/are allowed.
- 6) ☒ Claim(s) 7, 28, 30-46 and 48 is/are rejected.
- 7) ☒ Claim(s) 8, 47 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Final Drawing Review (PTO-848)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/15/2008 has been entered.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 7 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "said at least one further gas" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. For the purposes of examination, claim 7 is considered to depend from claim 5.

Claim 37 recites the limitation "said electrodes" in line 2. There is insufficient antecedent basis for this limitation in the claim. For the purposes of examination, claim 37 is being interpreted to mean "said plate electrodes".

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 28, 30-46, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuda et al (US 2003/0082412) in view of Roth et al ('453).

Fukuda teaches an arrangement for generating an atmospheric pressure glow discharge plasma (APG) comprising: a plurality of opposing plate electrodes arranged such that a discharge space is defined between said opposing plate electrodes, further comprising a voltage supply to said plate electrodes, and a gaseous substance supply system to supply a gaseous substance to said discharge space. The gaseous substance supply system provides at least one of a group of argon, nitrogen, or air to said discharge space (Fig. 2, [0007], [0011], [0083], [0133], [0136], [0142], [0153], [0312]).

Fukuda does not disclose that the voltage supply is an AC-voltage supply.

Roth teaches an arrangement for generating an atmospheric pressure glow discharge plasma (APG) comprising a pair of opposing plate electrodes arranged such that a discharge space is defined between said plate electrodes, further comprising an AC-voltage supply to said electrodes and a gaseous substance supply system to supply a gaseous substance to said discharge space (Fig. 1, Col. 2, lines 50-65, Col. 4, lines 15-22).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to use an AC-voltage supply as suggested by Roth in the process of Fukuda since this type of voltage supply would have reasonably been expected to be successful in generating APG with opposing plate electrodes.

Regarding Claim 28, 43, and 44, the AC-voltage supply has the capability of being controlled at various values (Roth, example 1, Tables 2-5) and having a frequency of at least 100 kHz. It is well settled that the intended use of a claimed apparatus is not germane to the issue of the patentability of the claimed structure. If the prior art structure is capable of performing the claimed use then it meets the claim. *In re Casey*, 152 USPQ 235, 238 (CCPA 1967); *In re Otto*, 136 USPQ 459 (CCPA 1963).

Regarding Claims 30-32, and 48, the gaseous substance supply system of Fukuda is arranged for providing at least one further gas to said gaseous substance [0152]-[0154]. The gaseous supply system has the capability of adjusting the concentration of said further gas [0152]. The further gas may be an organometallic [0154].

Regarding Claims 33-35, the arrangement of Fukuda has a means for flowing said gaseous substance through the discharge space (supply port) [0136]. The means for flowing said gaseous substance of Fukuda would have the capability of establishing a flow rate or flow velocity within the claimed ranges [0145].

Regarding Claims 37-39, Fukuda teaches arranging at least one of said electrodes to support a substrate which may be a thermoplastic polymer (Fig. 2, [0084], [0194]). This arrangement would have the capability of moving the substrate through the discharge space at a sufficient velocity [0135] and as discussed above the AC-voltage may be controlled at different values (Roth, example 2, Tables 2-5).

Regarding Claims 40-42, the arrangement of Fukuda includes a film of dielectric material that is contiguous with at least one electrode and has a thickness of 1mm [0140]. The discharge space of Fukuda comprises a distance between electrodes of 1 mm [0143].

Regarding Claim 45, Roth teaches that the arrangement further includes a choke coil (Fig. 2).

Thus, claims 28, 30-46, and 48 would have been obvious within the meaning of 35 USC 103 over the combined teachings of Fukuda and Roth.

#### ***Double Patenting***

4. Applicant is advised that should claim 32 be found allowable, claim 48 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing

one claim to object to the other as being a substantial duplicate of the allowed claim.  
See MPEP § 706.03(k).

***Response to Arguments***

5. Applicant's arguments, see p. 12-15, filed 7/15/2008, with respect to de Vries ('632) have been fully considered and are persuasive. The 35 USC 103 rejections in view of de Vries ('632) have been withdrawn. Amended claims 1 and 28, and new claim 50 recite the limitation of "a plurality of opposing plate electrodes". The examiner agrees with Applicant that de Vries ('632) is directed to a different electrode configuration (wire-plate). Also, de Vries ('632) teaches away from using opposite plate electrodes in Col. 2, lines 33-43, since the wire-plate configuration reduces the breakdown of the electric voltage and this advantage would not be expected with an opposite plate electrode configuration. However, upon further consideration, a new ground(s) of rejection is made with respect to claims 28, 30-46, and 48 in view of Fukuda and Roth as described in the rejections above.

***Allowable Subject Matter***

6. Claims 1, 3-6, 9-22, 24-27, and 49-50 are allowed.
7. Claims 8 and 47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: The prior art does not teach a method for generating an APG discharge plasma by providing a plurality of opposing plate electrodes to define a discharge space, supplying a

continuous stream of gaseous substance into the discharge space, controlling the power being provided in the form of an AC-voltage to said plate electrodes to be at an amplitude that is equal or less than 140% of the breakdown voltage of the gaseous substance, and maintaining the relationship between AC voltage and breakdown voltage as the gaseous substance is being supplied to control and reduce the temperature applied to the substrate.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIZABETH A. BURKHART whose telephone number is (571)272-6647. The examiner can normally be reached on M-Th 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.



For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elizabeth A Burkhart/  
Examiner, Art Unit 1792

/Timothy H Meeks/  
Supervisory Patent Examiner, Art Unit 1792